

II. Objection to the Specification

The Examiner has objected to the specification as containing grammatical errors, such as run-on sentences and misspellings, and improperly using trademarks. See pages 2-3 of the present Office Action. Applicant respectfully requests the objection be held in abeyance until indication of otherwise allowable subject matter. The specification will be amended to overcome these objections at that time.

III. Rejection Under 35 U.S.C. § 102(b)

Claim 33 has been rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,561,185 to Hashimoto et al. ("Hashimoto") for the reasons disclosed at pages 3-4 and 9-11 of the present Office Action.¹ Applicant respectfully traverses this rejection for at least the reasons of record as well as for the following reasons.

In order to anticipate a claim, a reference must teach, either expressly or inherently, each and every limitation of the claim. M.P.E.P. § 2131; PIN/NIP, Inc., v. Platte Chem. Co., 64 U.S.P.Q.2d 1344, 1349 (Fed. Cir. 2002). Applicant maintains that *Hashimoto* does not expressly or inherently teach all limitations of pending method claim 33. The reference does not expressly or inherently teach (1) a polyolefinic compound which contains at least one unsaturation and at least one carboxyl group in the polymer chain or (2) a method for controlling the strippability of a coating layer by the addition of the polyolefinic compound.

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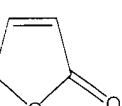
¹ Applicant acknowledges the withdrawal of the rejection of claim 33 over *Hashimoto* under Section 102(b).

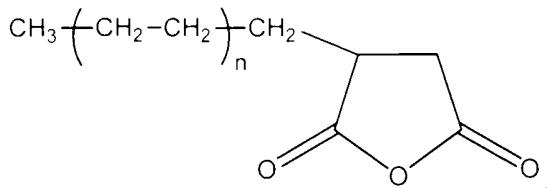
(1) A polyolefinic compound which contains at least one unsaturation and at least one carboxyl group in the polymer chain.

Claim 33 is drawn to a method for controlling the strippability of a coating layer on an electrical conductor. As set forth in claim 33, this method involves, *inter alia*, adding a predetermined amount of a polyolefinic compound, which contains at least one unsaturation and at least one carboxyl group in the polymer chain, to a polymeric composition. Applicant maintains that *Hashimoto* fails to teach a polyolefinic compound, which contains at least one unsaturation in the polymer chain.

In the present Office Action, the Examiner asserts that "*Hashimoto* clearly teaches an unsaturation, which is polyethylene that is modified with an unsaturated carboxylic acid or its derivative." See page 10 of the present Office Action, citing col. 3, lines 35-41 of *Hashimoto*. As discussed in Applicant's Amendment, filed April 14, 2003, the reaction product of polyethylene and an unsaturated carboxylic acid is NOT a polyolefinic compound, which contains at least one unsaturation in the polymer chain.

First, polyethylene is by definition a saturated chain and therefore contains no unsaturation itself. See e.g., Hawley's Condensed Chemical Dictionary, at pages 894-95 (14th ed. 2001) (courtesy copy previously submitted). Second, although *Hashimoto*'s unsaturated carboxylic acid contains at least one unsaturation **prior to reaction**, that unsaturated bond would become saturated during catalysis by initiation with peroxide and subsequent reaction with the polyethylene. See e.g., col. 4, lines 34-67. Accordingly, for example, a reaction of polyethylene, $\text{CH}_3(\text{CH}_2\text{-CH}_2)_n\text{CH}_3$, with

maleic anhydride,  maleic anhydride, may result in the following product:



Such a product does NOT contain at least one unsaturation according to the present invention. Thus, for at least the foregoing reasons, Applicant maintains that *Hashimoto* fails to teach the presently recited "polyolefinic compound which contains at least one unsaturation and at least one carboxyl group in the polymer chain" limitation.

The Examiner asserts that "applicant states that various polyethylene materials may be utilized as the material in the polymer matrix." See page 11 of the present Office Action, citing page 19, lines 21-22 of Applicant's Specification. However, this passage, as noted by the Examiner, refers to the polymer **matrix**, and NOT to the presently recited "polyolefinic compound which contains at least one unsaturation and at least one carboxyl group in the polymer chain." Specifically, the cited passage states:

[t]he **polymer matrix** of the two layers may be a polymer composition comprising polymers not containing halogens, chosen, for example, from polyolefins, polyolefin copolymers, olefin/ester copolymers, polyesters, polyethers, polyether/polyester copolymers and mixtures thereof. Examples of such polymers are polyethylene (PE), in particular linear low density PE (LLDPE)...."

See page 19, lines 16-22 of Applicant's Specification. Accordingly, Applicant does NOT define polyethylene as an example of the unsaturated polyolefin chain (see e.g., page 15, lines 1-16 reciting suitable examples) nor does Applicant define polyethylene as having at least one unsaturation.

The Examiner also asserts that "applicant maintains that butadiene is the only material responsible for the unsaturated position and therefore *Hashimoto* cannot

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anticipate the claim because it doesn't disclose butadiene." See page 11 of Applicant's Specification. Applicant disagrees with this statement. First, Applicant notes that butadiene is merely one example of a suitable starting material, which can be used to form the unsaturated polyolefin chain. Applicant's specification, at page 15, lines 1-5, clearly recites that "the unsaturated polyolefin chain is generally derived from the polymerization of diene or polyene monomers containing from 4 to 16 carbon atoms, **such as, for example**, butadiene" Moreover, Applicant notes that, whether or not *Hashimoto* discloses butadiene is irrelevant to this argument. Rather, Applicant's point is that *Hashimoto* only discloses "**modified polyethylenes**," which, as discussed above, do not contain at least one unsaturation in the polymer chain, and does not disclose polymers derived from the polymerization of diene or polyene monomers, which contain at least one carboxyl group in the polymer chain. Claim 33 recites a "polyolefinic compound which contains at least one unsaturation and at least one carboxyl group in the polymer chain."

Finally, the rejection cannot be maintained on the basis that "*Hashimoto* clearly teaches that the polymeric composition may comprise polymers of the diene compound such as butadiene." See page 11 of the present Office Action, citing col. 5, lines 42-48 of *Hashimoto*. First, the cited passage in *Hashimoto* discusses component (e) of *Hashimoto*'s compositions, i.e., aromatic vinyl/diene block copolymers, which is a separate and distinct component from component (b) of *Hashimoto*'s compositions, i.e., the modified polyethylenes. See e.g., *Hashimoto* at col. 5, lines 32-65. Moreover, the aromatic vinyl/diene block copolymers recited at col. 5, lines 42-48 of *Hashimoto* do not have, at a minimum, at least one carboxyl group in the chain as presently claimed.

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Accordingly, for at least the foregoing reasons, Applicant maintains that *Hashimoto* fails to teach the presently claimed “polyolefinic compound which contains at least one unsaturation and at least one carboxyl group in the polymer chain.”

(2) A method for controlling the strippability of a coating layer

Claim 33 is drawn to a method for controlling the strippability of a coating layer wherein, *inter alia*, the strippability is controlled by the addition of a polyolefinic compound, which contains at least one unsaturation and at least one carboxyl group in its polymer chain. *Hashimoto* fails to teach control of strippability using a such polyolefinic compound.

First, as discussed above, *Hashimoto* fails to teach the presently claimed “polyolefinic compound which contains at least one unsaturation and at least one carboxyl group in the polymer chain.” Therefore, *Hashimoto* CANNOT teach a method for controlling the strippability of a coating layer using the presently recited polyolefinic compound.

Further, even if, *arguendo*, *Hashimoto* did teach the presently claimed polyolefinic compound, it still would fail to teach controlling the strippability of a coating layer wherein, *inter alia*, the **strippability is controlled by the addition** of such a polyolefinic compound. Rather, *Hashimoto* merely discloses: “an electric wire . . . that is good in workability of the covering layer at the end of the covered wire in the step of removing the covering layer.” See col. 1, lines 19-21, and col. 2, lines 41-43.

In the present Office Action, the Examiner asserts that, based on these passages, “clearly, there exists a method of stripping.” See page 10 of the present

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Office Action. However, the issue is NOT whether *Hashimoto* discloses a method of stripping, but whether it discloses a method for **controlling** the strippability of a coating layer wherein, *inter alia*, the strippability is controlled **by the addition of a specific polyolefinic compound**. Applicant maintains that *Hashimoto* fails to disclose such a method.

For example, with respect to the passage at column 1, lines 19-21, of *Hashimoto*, cited by the Examiner, there is no disclosure of how to control the strippability of the covering layer by the addition of a polyolefinic compound. There is simply no indication which component, or mixtures of components from col. 3, lines 7-47, yields the property of "workability."

Even if we assume that the Examiner has correctly identified Applicant's polyolefin compound in *Hashimoto*, *Hashimoto* expressly teaches that this compound **does NOT** control strippability. Specifically, Table 4 of *Hashimoto* unequivocally shows that neither the presence nor the absence of *Hashimoto*'s polyethylene or polypropylene modified with maleic anhydride influences, let alone controls, the workability at the end of the wire. See e.g., Comparative Examples 12-17, which contain MAH-PE without exhibiting good workability at the end of the wire.

Because *Hashimoto* fails to identify which component(s) are relevant to the observed properties of the covering layer or which observed properties they affect, one of ordinary skill in the art could not read *Hashimoto* to find a method of **controlling** strippability. Accordingly, for at least the foregoing reasons, Applicant maintains that *Hashimoto* fails to expressly or inherently teach the presently claimed method for controlling the strippability of a coating layer.

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For at least the foregoing reasons, Applicant respectfully requests the pending rejection for anticipation be withdrawn.

IV. Rejection Under 35 U.S.C. § 103

Claims 33-50 have been rejected under 35 U.S.C. § 103 as obvious over *Hashimoto* in view of U.S. Patent No. 4,801,639 to Hoshi et al. ("Hoshi") for the reasons disclosed at pages 4-9 and 11-14 of the present Office Action. Applicant respectfully traverses this rejection at least for the reasons of record as well as for the following reasons.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See M.P.E.P. § 2143. Moreover, "[i]t is improper to combine references where the references teach away from the proposed combination." See e.g., M.P.E.P. § 2145.

In the present Office Action, the Examiner asserts that "there clearly exist[s] a motivation for modifying the flame retardant composition of *Hashimoto* to comprise the carboxylated compound . . . as taught by *Hoshi* because [1] *Hoshi* teaches that such a carboxylated compound utilized in a conductor covering composition generates no hazardous and corrosive gases of halogen type during burning due to fire outbreak and

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[2] is capable of preventing the deterioration and significant reduction in chemical resistance occurring of surfaces of the prior art resins and [3] are known in the art." See page 12 of the present Office Action. Applicant respectfully disagrees.

With respect to the Examiner's assertion that the requisite motivation arises because "*Hoshi* teaches that such a carboxylated compound utilized in a conductor covering composition generates no hazardous and corrosive gases of halogen type during burning due to fire outbreak," Applicant submits that this statement is factually flawed. Specifically, *Hoshi* attributes the production of such gases to the use of halogen compounds and antimony trioxide as flame retardants and NOT to a carboxylated compound. See e.g., col. 1, lines 13-31. Moreover, neither *Hoshi* nor *Hashimoto* utilize halogen compounds as flame retardants. Accordingly, the present rejection cannot be maintained on this basis.

With respect to the Examiner's assertion that the requisite motivation arises because "*Hoshi* teaches that such a carboxylated compound utilized in a conductor covering composition . . . is capable of preventing the deterioration and significant reduction in chemical resistance occurring of surfaces of the prior art resins," Applicant submits that this statement is also factually erroneous. First, *Hoshi* does NOT teach that the dicarboxylic acid or dicarboxylic acid anhydride derivative (a carboxylated compound), by itself, is capable of preventing the deterioration and significant reduction in chemical resistance. In contrast, *Hoshi* teaches that its "olefinic resin composition . . . can prevent the surface deterioration and surface attack by chemicals in electric wires and cables . . . **because** it comprises a silane-grafted polymer **and** a dicarboxylic acid or dicarboxylic acid anhydride derivative." See col. 2, line 66 - col. 3, line 4 (emphasis

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added). Apparently, in *Hoshi*'s olefinic resin composition, "there are formed (a) siloxane linkages between the silane-grafted polymer and the hydrated metal compound and (b) complex salt linkages between the dicarboxylic acid or dicarboxylic acid anhydride derivative and the hydrated metal compound." See col. 5, lines 26-30. *Hoshi* teaches that "[t]he synergistic effect of these two types of linkages can remarkably reduce the surface deterioration and severe surface attack by chemicals which occur at conventional flame-retardant resin compositions using a hydrated metal compound." See col. 5, lines 30-36 (emphasis added). However, *Hoshi* warns that "[s]evere requirements for flame-retardant resin compositions **can be met only by the synergistic effect of the two types of linkages** and **can never be met by either one of the two linkages.**" See col. 5, lines 36-39 (emphasis added).

In the present case, *Hashimoto* fails to teach, suggest, or even mention a silane-grafted polymer. Thus, according to the teachings of *Hoshi*, the proposed addition of *Hoshi*'s dicarboxylic acid or dicarboxylic acid anhydride derivative to *Hashimoto*'s compositions would NOT result in the reduction of surface deterioration and severe surface attack by chemicals touted by *Hoshi*. Moreover, one of ordinary skill in the art would not have been motivated to make the proposed modification in order to obtain the object of *Hoshi*'s invention, i.e., "preventing the deterioration and significant reduction in chemical resistance occurring of surfaces of the prior art resins," because, *inter alia*, *Hoshi* **teaches away** from the use of its dicarboxylic acid or dicarboxylic acid anhydride derivative in the absence of its silane-grafted polymer. Accordingly, the present rejection cannot be maintained on this basis either.

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Furthermore, with respect to the Examiner's assertion that the requisite motivation arises because "*Hoshi* teaches that such a carboxylated compound utilized in a conductor covering composition . . . are known in the art," the Examiner asserts that "it has been held to be within general skill of a worker in the art to select as known material **on the basis of its suitability for the intended use** as a matter of obvious design choice." See page 13 of the present Office Action (emphasis added). However, Applicant notes that *Hashimoto* fails to disclose an intended use for its modified polyethylenes (see e.g., col. 4, lines 34-67). Further, as discussed above, the dicarboxylic acid or dicarboxylic acid derivative of *Hoshi* is intended to be used only in conjunction with a silane grafted polymer, a component *Hashimoto* does not teach or suggest for its compositions. Accordingly, the modification proposed by the Examiner does NOT involve "the selection of a known material based on its suitability for its intended use." See M.P.E.P. § 2144.07. For at least this reason, the present rejection cannot be maintained on this basis either.

Finally, as discussed in Section III, *Hashimoto* does not inherently or expressly teach all the limitations of the claims. Applicant incorporates by reference herein those arguments, and further asserts that there is no evidence that *Hoshi* corrects these deficiencies.

For at least the foregoing reasons, Applicant respectfully requests the pending rejection for obviousness be withdrawn.

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V. Conclusion

Applicant submits that this claimed invention is neither anticipated nor rendered obvious in view of the cited references. Applicant therefore requests reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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